SECTION 26 05 70

ELECTRICAL CABINETS AND ENCLOSURES

PART 1 - GENERAL

1.01 SECTION INCLUDES

A. Enclosures.

B. Auxillary devices.

C. Terminal strips.

D. Nameplates.

1.02 RELATED SECTIONS

A. Control station, panel, and interface cabinet requirements specified in other Sections of these Specifications shall apply for the equipment covered in those Sections.

1.03 REFERENCES

A. National Electrical Manufacturer's Association (NEMA):

1. NEMA ICS 2 Industrial Control and Systems Controllers, Contactors, and Overload Relays Rated Not More Than 2000 Volts AC or 750 Volts DC

1.04 REGULATORY REQUIREMENTS

A. Refer to Section 20 70 26 - Common Materials and Methods for Electrical Systems, for requirements

1.05 SUBMITTALS

A. General: Refer to Section 01 33 00 - Submittal Procedures, and Section 01 33 23 - Shop Drawings, Product Data, and Samples, for submittal requirements and procedures.

B. Shop Drawings: Submit Shop Drawings showing materials and methods of construction, door arrangement, conduit hub and knockout locations, complete internal wiring diagrams, mounting locations and supports for equipment mounted in the panels and cabinets, terminal strip designations, and wire numbers.

C. Product Data: Submit manufacturer's product data for manufactured items as follows:

1. Manufacturer's model number or item identification;

2. UL listing and rating;

3. Critical dimensions and mounting arrangement; and

4. Complete replacement parts list.

D. Test Reports: Submit certified test reports of electrical continuity, insulation, and ground continuity tests performed on installed products.

1.06 QUALITY ASSURANCE

A. Select a manufacturer who has been regularly engaged in the manufacture of similar equipment and has met all UL requirements.

B. Conform with applicable requirements of the California Electrical Code.

C. Components of the same type, size, rating, functional characteristics, and manufacture shall be interchangeable.

D. Controls and auxiliary devices shall be tested and certified in accordance with NEMA ICS 2. Certificate of compliance shall be submitted before the assembled equipment is shipped.

1.07 DELIVERY, STORAGE, AND HANDLING

A. Provide marking on each control station, auxiliary control panel, and interface cabinet in accordance with the referenced standard.

B. Ship each unit securely wrapped, packaged, and labeled for safe handling in shipment and to avoid damage or distortion.

C. Store control stations, auxiliary control panels, and interface cabinets in secure and dry storage facility.

PART 2 - PRODUCTS

2.01 EQUIPMENT

A. Enclosure: NEMA 12 or as otherwise indicated.

B. Auxiliary Devices:

1. Provide devices of heavy-duty oil-tight construction. Indicator lights shall be transformer type, 120 V ac, 60 Hz, with 50,000 hour lamp life.

2. Auxiliary devices to be installed at each unit shall be standard products and shall be wired in accordance with control diagrams as indicated. Provide heavy-duty type relay, with a contact rating of 20 A at 120 V ac, operating satisfactorily at a temperature of 120 degrees F. Relay characteristics, including inrush current rating, shall be identified on the Shop Drawings.

C. Fabrication: Local control stations, auxiliary control panels, and interface terminal cabinets shall be fabricated and wired complete.

D. Terminal Strips: Channel mounted, snap-fit terminal blocks for 600 V service, molded, high impact strength, strap screw type for 22 AWG through 10 AWG. Terminals shall be at 3/8 inch centers.

E. Nameplates: Provide nameplates showing equipment number. Nameplates shall conform to the requirements of Section 20 70 26 - Common Materials and Methods for Electrical Systems.

PART 3 - EXECUTION

3.01 INSTALLATION

A. Embed structural steel or cast-iron sills in concrete for anchoring control stations.

B. Install local control stations, auxiliary control panels, and interface terminal cabinets as indicated and as recommended by the manufacturer, and provide seismic supports and restraints in accordance with applicable requirements of the California Building Code and the California Electrical Code.

C. Install conduit in accordance with requirements of Section 20 50 13 - Raceways for Facility Services

D. Connect power cables and control wires as indicated, and in accordance with Section 26 05 24 - Low and Medium Voltage Wires and Cables, and Section 20 70 26 - Common Materials and Methods for Electrical Systems

E. Ground local control stations, auxiliary control panels, and interface cabinets in accordance with Section 26 05 26 - Grounding and Bonding for Electrical Systems.

3.02 TESTS

A. Perform the following tests, under the observation of the Engineer, and submit certified reports of all tests performed. Furnish equipment and instruments required to perform the tests.

1. Test circuits for connections in accordance with accepted wiring diagrams.

2. Test that insulation resistance to ground of non-grounded conductor is a minimum of ten mega-ohms.

3. Test equipment enclosures for continuity to the grounding system.

4. Test operation of circuits and controls. When testing, operate each control a minimum of ten times and each circuit continuously for a minimum of 1/2 hour.

5. When testing the interface terminal cabinet, provide temporary switches, pilot lights, and relays for remote control and monitoring. Connect these devices to the opposite side of the terminal blocks. Remove upon completion of the tests.

END OF SECTION 26 05 70